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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/834,432 | 04/13/2001 | Christoph von Koplow | GK-ZEI-3117 / 500343.2001 | 5907 |

7590 09/25/2002

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EXAMINER

JACKSON, CORNELIUS H

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| | 2828 |

DATE MAILED: 09/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|----------------------|---------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/834,432 | KOPYLOW ET AL |
| Period for Reply | Examiner | Art Unit |
| | Cornelius H. Jackson | 2828 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 13 April 2001.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-25 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.



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Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) Interview Summary (PTO-413) Paper No(s). _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____.

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claim 1, the phrase "or the like"(in this case "or corresponding optical elements") renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). Claims 2-8 are rejected for depending on a rejected indefinite claim.

5. Claim 9 recites the limitation "the cavity" in line 7 of the claim. There is insufficient antecedent basis for this limitation in the claim. Claims 10-25 are rejected for depending on a rejected indefinite claim.

6. Claim 9 recites the limitation "the out-coupling mirror" in line 6 of the claim. There is insufficient antecedent basis for this limitation in the claim. Claims 10-25 are rejected for depending on a rejected indefinite claim.

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7. Regarding claim 11, the word "means" is preceded by the word(s) "of a controlling circuit" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

8. Claim 12 recites the limitation "the intermediary" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 13 recites the limitation "the piezo-actuator" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

10. Each of claims 14, 15 and 25 recite the limitation "the stepper motor" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 15 recites the limitation "the field vector" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 16 recites the limitation "the motor" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 17 recites the limitation "the vertical line" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

14. Claim 18 recites the limitation "the moving element" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

15. Claim 19 recites the limitation "the element" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

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16. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: wedge-shaped crystals or other optical elements are in relationship with the elements of the claim on which it depends.

17. Regarding claim 21, the word "means" is preceded by the word(s) "of suitable matching of the selectivity of the etalon" in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967). Also the phrase "in such a way" is vague and indefinite as to how the standing cavity is provided.

18. Regarding claim 23, it is unclear as to whether the invention further comprises a piezo-actuator and a stationary etalon, or if the actuator (previously stated in a parent claim) is a piezo-actuator and the etalon (previously stated in a parent claim) is a stationary etalon.

Claim Rejections - 35 USC § 102

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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20. Claims 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Esterowitz et al. (5272708). Esterowitz et al. discloses, as cited in claim 9, an arrangement for the self-calibration of a tunable, diode pumped solid state laser **Fig. 1**, wherein the laser comprises: a laser diode **12** as a pump light source followed by in-coupling optics **28**, a laser crystal **18** followed by out-coupling optics **24** or a nonlinear, frequency-doubling crystal, wherein the outer surfaces of the laser crystal **18** and frequency-doubling crystal or out-coupling mirror **24** have a reflective coating **20/24** see col. 4, lines 1-10 for the laser fundamental frequency and/or for the frequency-doubled radiation and enclose the cavity **22** between them; and further comprises: an actuator **46** for varying the cavity length for the purposes of tuning the laser; an etalon **32** being provided inside the cavity for changing (expanding) the tuning range and for determining the output power of the laser, wherein the etalon **32** is rotatable or swivelable about an axis of rotation which extends at right angles to the optical axis of the laser or at an inclination to the latter by a small angle, see col. 4, lines 33-39.

Regarding claim 10, Esterowitz et al. disclose the etalon is transparent and is rotatable about the axis of rotation and is angularly adjustable by an angular drive **34**, see col. 4, lines 33-39.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 1-8 and 11-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esterowitz et al. (5272708) in view of Esterowitz et al. (4969150) and Terada (5084884). Regarding claim 11, Esterowitz et al. (5272708), as applied to claims 9 and 10 above, teach all the stated limitations except for a stepper motor controlled by a controlling circuit; instead, Esterowitz et al. (5272708) teach a mechanical means. Esterowitz et al. (4969150) teach a motor as a drive device. It would have been obvious of one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Esterowitz et al. (4969150) to that of Esterowitz et al. (5272708), since Esterowitz et al. (5272708) teach referencing Esterowitz et al. (4969150) for a discussion of a tuning element, **see col. 4, lines 39-44**. Terada teach a controlling circuit **11** for controlling the rotation of the etalon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Terada to that of Esterowitz et al. (5272708) to stabilize and control the wavelength and/or output power of the laser beam, since the output power and wavelength of the laser beam emitted from the laser apparatus main body can fluctuate as a result of mechanical vibrations and/or fluctuations in the ambient temperature and atmospheric pressure during operation of the apparatus, **see col. 2, line 5-col. 3, line 35**. It would have been an obvious matter of design choice to use a stepper motor, since applicant has not disclosed that a stepper motor solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with other mechanical means.

Regarding claim 12, Terada teach an actuator **12/13** in operative connection with the etalon **3/4**. As for the actuator being a piezo-actuator, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 13-16, 18-19 and 21-25, all the stated limitations are considered as a matter of obvious design choice, **see claims 11 and 12 above**.

Regarding claim 17, Esterowitz et al. (5272708) teach the angle of inclination is less than 10 degrees, **see Fig. 1**.

Regarding claim 20, Esterowitz et al. (5272708) teach wedge-shaped optical elements **26 and 40, see col. 4, lines 10-17**.

Regarding claims 1-8, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the rejection used against the device, stands for the method as well.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hans (3609586), Esherick et al. (4791633) and Alfano et al. (4932031) teach (alone or in combination) the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cornelius H. Jackson whose telephone number is (703) 306-5981. The examiner can normally be reached on 8:00 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

CHJ
chj
September 19, 2002

Paul Ip
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